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COPPER • BRASS • BRONZE

copper supply & consumption

1967-1987

COPPER DEVELOPMENT ASSOCIATION INC.

Preface

Statistical data on the supply and consumption of copper and copper alloys in the United States are available from many governmental and private sources. In this report original data from these sources are brought together and rationalized by CDA and American Bureau of Metal Statistics Inc. (ABMS) to provide a set of data on U.S. copper supply and consumption that is both consistent and accurate in all aspects from mine to end-use market.

The main sources of information assembled here are the Bureau of Mines in the U.S. Department of the Interior, the Bureau of the Census in the U.S. Department of Commerce, and Copper Development Association Inc. Where data from different sources are conflicting, and where original data appear to be in error, the best judgment has been applied. General sources are shown in the tables throughout the report. Those interested to know the specific sources of any of the data should contact CDA.

The statistics are arranged in a logical sequence to trace the flow of copper in the U.S. economy from mining and scrap collection through smelting, refining and ingot making to the wire rod and wire mills, brass mills, and foundries and then on to the final end-use markets. This flow is shown schematically on pages 4-5. On this schematic flowsheet the major statistics of copper supply and consumption in the United States for 1987 appear. Along with each major statistic on the chart, a reference is shown. This reference identifies the table in the report where details on that item, from 1967 through 1987, will be found. Most data for 1987 are preliminary.

There are four major tables in the report. *Table 1* covers the supply of primary copper. *Table 2* presents data on the supply of copper from secondary sources. In *Table 3*, statistics on the consumption of primary and secondary metals by mills, foundries and other industries are summarized. These three tables are provided by ABMS. Finally, *Table 4* details the supply of mill, foundry and powder products and their consumption in the five end-use market areas. In each of these tables, additions to the flow (such as net imports) are indicated as positive numbers, while subtractions from the flow (such as melting losses or net additions to stocks) are shown as negative numbers.

The arrangement of the data in the report can be illustrated with an example. Consider *Mine Production*, the upper left-hand box in the flowsheet on page 4. As shown in the box, mine production of copper in the United States totaled 1,405.1 thousand short tons in 1987. Beneath this figure a number appears referring to *Table 1, Item 1*, abbreviated *1 (1)*. This means that in *Table 1*, on Line (1), mine production is shown for the full period 1967 through 1987. In *Table 1*, on Line (1), a further reference will be found after the item heading *Mine Production*, directing the reader to page 7. This reference means that further details on mine production appear on page 7. In fact, on page 7, a table entitled *Table 1, Item 1* presents the data on mine production by state for 1967 through 1987. In this way all the data on supply and consumption appear in logical sequence proceeding through the report, eliminating the need for explanatory text.

A major revision in the report this year is the incorporation of the solvent extraction/electrowinning cycle into the flowsheet. This is now shown as a separate flow of copper bypassing the smelter. Data on electrowon production are incorporated into the report for the period starting in 1972. Because of this change, *Table 1, Items 4-11* are revised from previous editions of the report.

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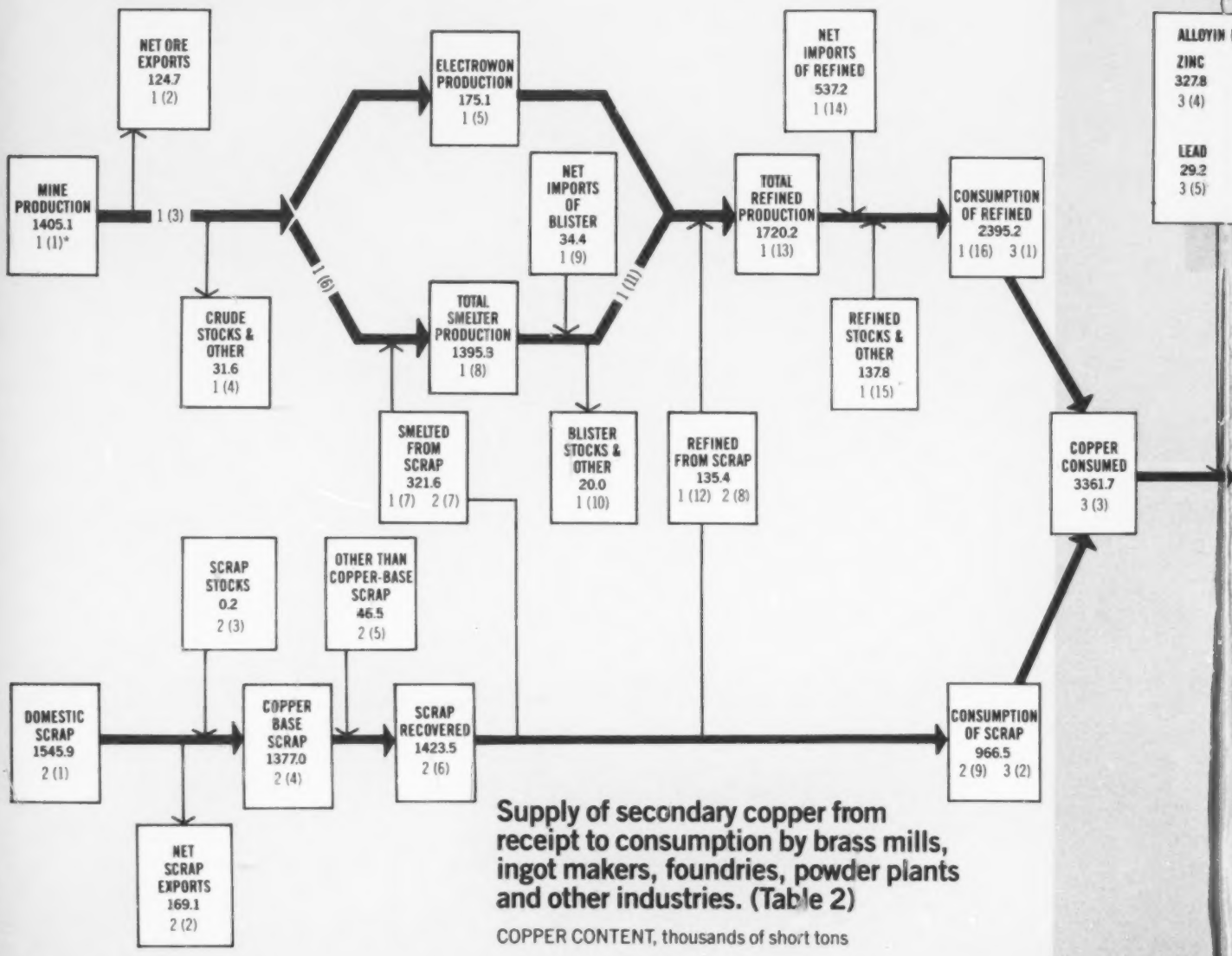
Copper supply and consumption in the United States 1987

Supply of primary copper from mine to consumption by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries. (Table 1)

COPPER CONTENT, thousands of short tons


NET ORE EXPORTS 124.7 1 (2)
ELECTROWON PRODUCTION 175.1 1 (5)
NET IMPORTS OF REFINED 537.2 1 (14)
ALLOYIN
ZINC 327.8 3 (4)
LEAD 29.2 3 (5)
MINE PRODUCTION 1405.1 1 (1)*
1 (3)
NET IMPORTS OF BLISTER 34.4 1 (9)
TOTAL REFINED PRODUCTION 1720.2 1 (13)
CONSUMPTION OF REFINED 2395.2 1 (16) 3 (1)
1 (6)
1 (11)
CRUDE STOCKS & OTHER 31.6 1 (4)
TOTAL SMELTER PRODUCTION 1395.3 1 (8)
REFINED STOCKS & OTHER 137.8 1 (15)
SMELTED FROM SCRAP 321.6 1 (7) 2 (7)
BLISTER STOCKS & OTHER 20.0 1 (10)
REFINED FROM SCRAP 135.4 1 (12) 2 (8)
COPPER CONSUMED 3361.7 3 (3)
SCRAP STOCKS 0.2 2 (3)
OTHER THAN COPPER-BASE SCRAP 46.5 2 (5)
DOMESTIC SCRAP 1545.9 2 (1)
COPPER BASE SCRAP 1377.0 2 (4)
SCRAP RECOVERED 1423.5 2 (6)
CONSUMPTION OF SCRAP 966.5 2 (9) 3 (2)
NET SCRAP EXPORTS 169.1 2 (2)

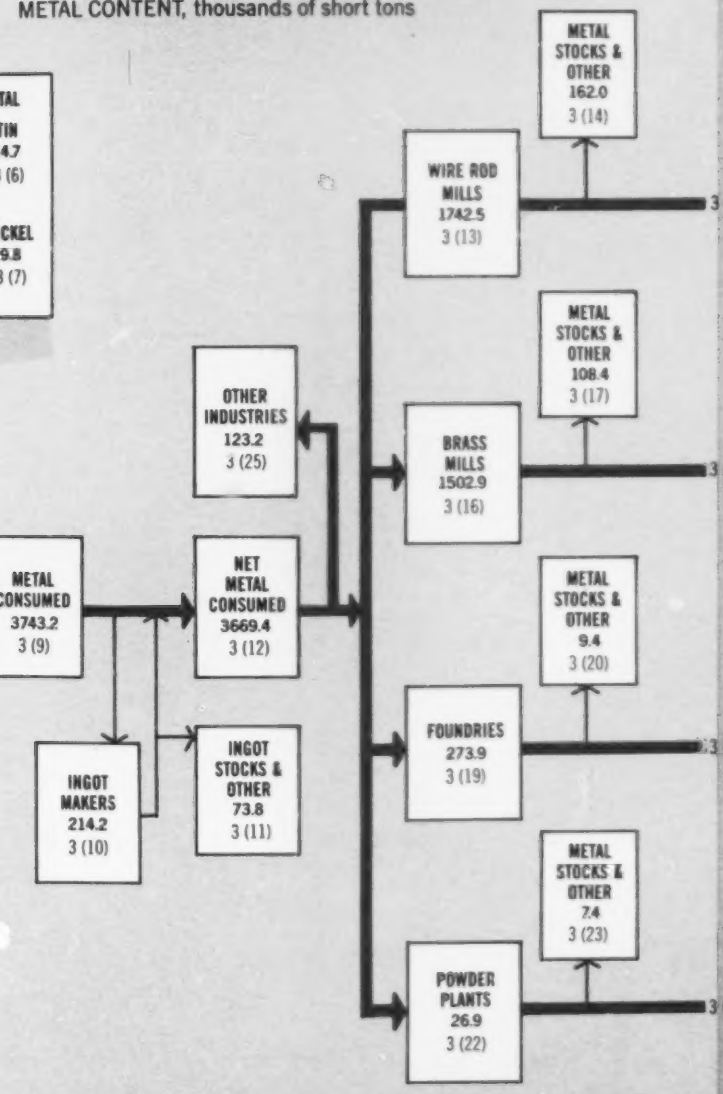
Supply of secondary copper from receipt to consumption by brass mills, ingot makers, foundries, powder plants and other industries. (Table 2)

COPPER CONTENT, thousands of short tons

*1 (1) Refers to table and item in report where data for 1967 through 1987 appear.

Consumption of metals by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries. (Table 3)

METAL CONTENT, thousands of short tons


METAL STOCKS & OTHER 162.0 3 (14)
WIRE ROD MILLS 1742.5 3 (13)
3 (15)
METAL STOCKS & OTHER 108.4 3 (17)
OTHER INDUSTRIES 123.2 3 (25)
BRASS MILLS 1502.9 3 (16)
3 (18)
METAL CONSUMED 3743.2 3 (9)
NET METAL CONSUMED 3669.4 3 (12)
METAL STOCKS & OTHER 9.4 3 (20)
INGOT MAKERS 214.2 3 (10)
INGOT STOCKS & OTHER 73.8 3 (11)
FOUNDRIES 273.9 3 (19)
3 (21)
METAL STOCKS & OTHER 7.4 3 (23)
POWDER PLANTS 26.9 3 (22)
3 (24)

Supply of wire mill, brass mill, foundry and powder products and their consumption in the end-use markets. (Table 4)

METAL CONTENT, millions of pounds

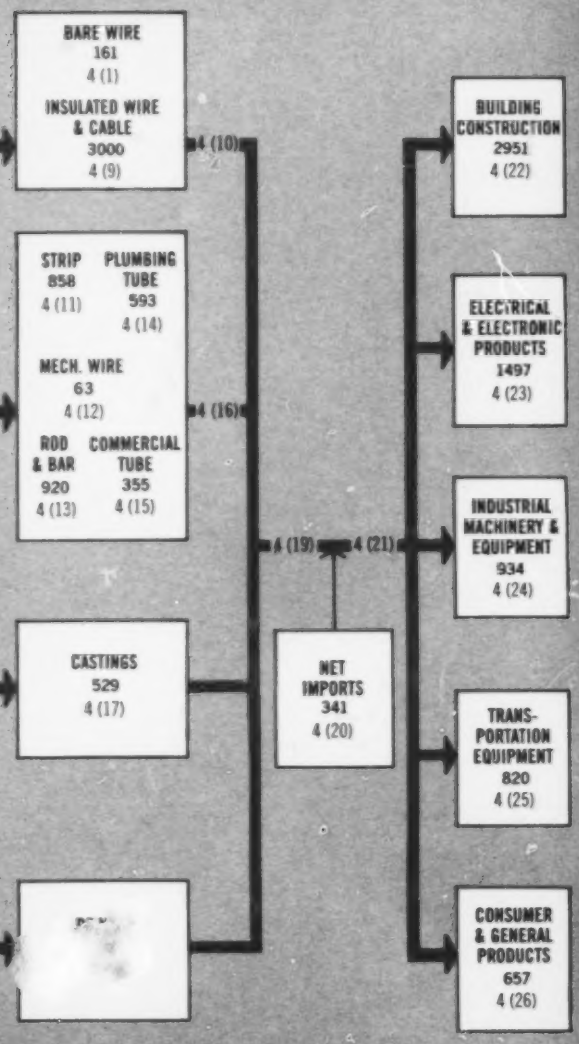

BARE WIRE 161 4 (1)
INSULATED WIRE & CABLE 3000 4 (9)
4 (10)
STRIP 858 4 (11)
PLUMBING TUBE 593 4 (14)
MECH. WIRE 63 4 (12)
ROD & BAR 920 4 (13)
COMMERCIAL TUBE 355 4 (15)
4 (16)
CASTINGS 529 4 (17)
4 (19)
NET IMPORTS 341 4 (20)
4 (21)
BUILDING CONSTRUCTION 2951 4 (22)
ELECTRICAL & ELECTRONIC PRODUCTS 1497 4 (23)
INDUSTRIAL MACHINERY & EQUIPMENT 934 4 (24)
TRANS-PORTATION EQUIPMENT 820 4 (25)
CONSUMER & GENERAL PRODUCTS 657 4 (26)

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Table 1

Supply of primary copper from mine to consumption by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
(1) Mine Production (page 7)	954.1	1,204.0	1,544.6	1,719.7	1,522.2	1,664.8	1,717.9	1,597.0	1,413.4	1,605.6	1,504.0	1,496.5	1,594.6	1,301.9	1,695.5	1,264.3	1,144.3	1,215.4	1,218.9	1,264.7r	1,405.1
(2) Net Ore Imports (page 8)	–5.7	–37.4	37.9	–27.7	23.1	35.4	19.4	36.7	65.7	74.8	42.2	13.9	–23.9	–101.2	–130.2	–107.1	55.7	–50.2	–120.5	–186.2	–124.7
(3) Total Crude Primary	948.4	1,167.2	1,582.5	1,692.0	1,545.3	1,700.2	1,737.3	1,633.7	1,479.1	1,680.4	1,546.2	1,510.4	1,570.7	1,200.7	1,565.3	1,157.2	1,200.0	1,165.2	1,098.4	1,078.5r	1,280.4
(4) Crude Stocks and Other	–86.1	99.3	3.0	–50.7	–45.3	12.1r	33.2r	–40.6r	–1.0r	–41.8r	28.5r	18.3r	12.0r	40.4r	63.8r	63.6r	–37.7r	93.0r	59.4r	60.7r	–31.6
(5) Electrowon Production	NA	NA	NA	NA	NA	21.9	26.5	23.2	31.0	103.9	139.5	108.5	110.4	129.6	177.6	145.3	139.6	140.3	120.8	138.2	175.1
(6) Smelter Production From Primary	862.3	1,266.5	1,585.5	1,641.3	1,500.0	1,690.4	1,744.0	1,569.9	1,447.1	1,534.7	1,435.2	1,420.2	1,472.3	1,111.5	1,451.5	1,075.5	1,022.7	1,117.9	1,037.0r	1,001.0r	1,073.7
(7) Smelter Production From Scrap	70.7	84.8	77.3	78.9	66.3	69.0	77.8	79.5	49.4	51.0	49.4	59.8	66.4	49.5	67.1	49.7	65.3	186.6	275.7r	317.3r	321.6
(8) Total Smelter Production (page 8)	933.0	1,351.3	1,662.8	1,720.2	1,566.3	1,759.4	1,821.8	1,649.4	1,496.5	1,585.7	1,484.6	1,480.0	1,538.7	1,161.0	1,518.6	1,125.2	1,088.0	1,304.5	1,312.7r	1,318.3r	1,395.3
(9) Net Imports of Blister (page 8)	248.3	255.0	233.6	216.6	128.0	148.9	146.6	205.1	87.4	41.1	28.3	70.0	66.9	47.6	71.1	111.8	79.4	57.1	11.6	33.4	34.4
(10) Blister Stocks and Other (page 9)	22.4	–84.1	–76.3	–92.8	–36.2	12.0r	–48.6r	–143.5r	–122.1r	–140.4r	–106.8r	–1.4r	20.8r	46.0r	1.8r	19.7r	61.3r	–31.5r	–4.1r	10.4r	–20.0
(11) Refined Production from Blister	1,203.7	1,522.2	1,820.1	1,844.0	1,658.1	1,920.3r	1,919.8r	1,711.0r	1,461.8r	1,486.4r	1,406.1r	1,548.6r	1,626.4r	1,254.6r	1,591.5r	1,256.7r	1,228.7r	1,330.1r	1,320.2r	1,362.1r	1,409.7
(12) Refined Production from Scrap	322.9	316.8	394.8	398.7	304.3	316.3	366.3	404.4	282.1	300.2	303.0	362.3	441.2	474.3	465.1	465.7	377.5	171.5	140.4r	130.5r	135.4
(13) Total Refined Production (page 9)	1,526.6	1,839.0	2,214.9	2,242.7	1,962.4	2,258.5	2,312.6	2,138.6	1,774.9	1,890.5	1,848.6	2,019.4	2,178.0	1,858.5	2,234.2	1,867.7	1,745.8	1,641.9	1,581.4r	1,630.8r	1,720.2
(14) Net Imports of Refined (page 9)	168.7	149.3	–83.8	–89.9	–23.7	9.7	8.8	177.2	–26.4	266.1	327.8	342.7	147.1	481.1	325.2	274.2	435.2	450.4	350.3	524.9	537.2
(15) Refined Stocks and Other (page 10)	288.3	–109.9	19.1	–102.3	82.3	–30.6	126.9	–112.3	–206.2	–159.1	16.8	59.6	60.9	–280.8	–322.3	–307.5	–184.2	247.6	226.6r	153.8r	137.8
(16) Consumption of Refined (page 10)	1,983.6	1,878.4	2,150.2	2,050.5	2,021.0	2,237.6	2,448.3	2,203.5	1,542.3	1,997.5	2,193.2	2,421.7	2,386.0	2,058.8	2,237.1	1,834.4	1,996.8	2,339.9	2,158.3r	2,309.5r	2,395.2

Sources: U.S. Department of the Interior, Bureau of Mines;
U.S. Department of Commerce, Bureau of the Census.

p - preliminary r - revised

Note: Table 1 has been restructured to show the increasingly important role of solvent extraction/electrowinning. Data on electrowon copper production (Line 5) are available from 1972.

Table 1, Item 1.

Mine production of recoverable copper in the United States

COPPER CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Arizona	501.7	628.0	801.4	917.9	820.2	908.6	927.3	858.8	813.2	1,024.4	923.8	982.6	1,046.1	848.9	1,147.3	848.3	747.6	822.8	878.1	869.9r	858.8
Michigan	58.5	74.8	75.2	67.5	56.0	67.3	72.2	67.0	73.7	43.7	42.4	38.4	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Missouri	3.2	5.5	12.7	12.1	8.4	11.5	10.3	12.7	14.3	11.1	11.7	11.9	14.4	15.0	9.3	8.8	8.5	6.4	14.8	(b)	(b)
Montana	65.5	69.5	103.3	120.4	88.6	123.1	132.5	131.1	88.0	91.1	86.2	74.2	77.0	41.6	68.9	71.6	36.8	24.1	16.6	(b)	(b)
Nevada	50.8	77.2	104.9	106.7	96.9	101.1	93.7	84.1	81.2	58.2	67.1	22.5	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
New Mexico	75.0	90.8	120.0	166.3	157.4	168.0	204.7	196.6	146.3	172.4	164.7	140.9	181.1	164.7	169.9	(b)	(b)	(b)	(b)	(b)	(b)
Tennessee	14.6	14.2	15.4	15.5	13.9	11.3	8.5	6.3	10.0	11.1	6.2	12.4	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Utah	168.6	228.2	296.7	295.7	263.5	259.5	256.6	230.6	177.2	185.5	194.1	205.4	212.8	173.9	232.9	208.4	187.1	(b)	(b)	(b)	(b)
Other States[a]	16.2	16.4	15.0	17.6	17.3	14.4	12.1	9.8	9.5	8.1	7.8	8.2	63.2	57.8	67.2	127.2	164.3	362.1	309.4	394.8r	546.3
TOTAL	954.1	1,204.6	1,544.6	1,719.7	1,522.2	1,664.8	1,717.9	1,597.0	1,413.4	1,605.6	1,504.0	1,496.5	1,594.6	1,301.9	1,695.5	1,264.3	1,144.3	1,215.4	1,218.9	1,264.7r	1,405.1

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Includes California, Colorado, Idaho, Maine, Oregon, Pennsylvania & Washington.
(b) - Included In Other States.

Mine production of recoverable copper in the World

COPPER CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Australia	101.2	120.8	144.2	173.9	195.4	204.8	242.8	277.0	241.4	240.9	244.3	244.8	261.9	268.4	255.0	270.4	288.3	259.8r	286.4r	273.8r	245.8
Canada	613.3	633.3	573.2	672.7	721.5	793.3	908.2	905.4	808.9	805.7	837.1	726.9	701.5	789.7	762.0	675.2	719.8	795.6	814.2	770.0r	845.8
Chile	727.7	724.1	758.5	762.4	780.8	790.1	810.6	994.4	913.0	1,108.0	1,162.1	1,140.0	1,171.4	1,177.2	1,191.7	1,369.3	1,386.2	1,422.8	1,495.2	1,543.0r	1,533.0
China (including Mongolia)	99.2	99.2	93.7	110.2	121.3	126.8	132.3	143.3	154.3	165.3	170.9	180.8	200.3	230.4	266.5	297.6	297.6	339.5	359.3	374.8r	374.8
Japan	129.9	132.2	133.5	131.7	133.4	123.6	100.6	90.5	93.7	89.9	89.7	79.4	65.1	58.0	56.8	55.9	50.7	47.7	47.6	38.5r	24.3
Mexico	61.7	67.4	73.0	67.2	69.7	86.8	88.7	91.2	86.2	98.1	98.9	96.1	118.1	193.3	254.1	263.6	227.2	208.4r	197.2	200.5r	227.4
Papua New Guinea	–	–	–	–	–	136.7	201.6	202.9	190.1	194.6	201.0	218.9	188.3	161.8	182.3	187.4	201.9	181.2	192.9	196.9r	211.2
Peru	212.4	234.2	219.1	242.7	228.5	241.5	223.4	233.2	194.0	207.2	370.4	419.9	445.9	404.2	361.1	392.8	355.2	401.4r	431.4r	438.1r	448.0
Philippines	95.0	121.6	144.8	176.7	217.8	235.6	243.8	248.6	248.9	261.9	300.7	290.6	328.8	335.7	333.2	322.0	299.2	257.3r	244.9	239.2	237.9
Poland	19.1	28.3	53.2	91.4	134.7	148.8	167.6	203.9	253.5	289.9	310.9	343.9	374.8	378.1	324.7	414.5	443.5	475.1	476.2	479.5r	479.5
Scandinavia	64.6	71.7	87.5	84.9	88.6	100.1	124.5	110.7	118.6	129.8	133.0	135.9	127.4	119.7	129.0	133.6	149.6	155.9r	151.6r	148.9r	146.2
South Africa	140.5	138.5	140.1	164.5	173.6	178.5	193.8	197.4	197.2	217.0	238.2	230.7	224.0	233.6	232.1	228.3	233.5	233.7	224.8	224.0r	212.4
United States	954.1	1,204.6	1,544.6	1,719.7	1,522.2	1,664.8	1,717.9	1,597.0	1,413.4	1,605.6	1,504.0	1,496.5	1,594.6	1,301.9	1,695.5	1,264.3	1,144.3	1,215.4	1,218.9	1,264.7r	1,405.1
USSR	767.0	791.0	839.0	887.0	949.0	988.0	1,017.0	1,017.0	1,047.2	1,080.3	1,080.3	1,069.2	1,069.2	1,080.3	1,102.3	1,113.3	1,124.4	1,124.4	1,135.4	1,135.4	1,135.4
Yugoslavia	69.7	77.7	90.1	100.1	104.1	113.6	123.2	123.6	126.7	132.4	128.1	135.9	122.8	128.7	122.4	131.5	142.7	128.1r	128.6r	128.6r	122.4
Zaire	353.3	359.4	401.4	426.7	448.8	480.3	538.5	550.8	545.4	490.1	530.9	467.2	440.7	506.7	556.4	554.2	553.6	551.9	553.5	554.0r	550.1
Zambia	730.8	755.0	793.1	754.1	718.0	790.5	778.9	769.4	746.2	781.4	723.1	708.8	648.5	656.8	647.5	624.9	598.3r	622.6r	572.8	599.1r	571.1
Other (30 countries in 1985)	331.3	347.4	336.2	359.2	389.7	434.3	517.5	546.9	544.6	544.3	535.5	474.9	475.6	465.4	519.9	609.0r	674.0	697.4r	731.0r	708.8r	646.6
TOTAL WORLD	5,470.8	5,906.4	6,425.2	6,925.1	6,997.1	7,638.1	8,130.9	8,303.2	7,923.3	8,442.4	8,659.1	8,460.4	8,559.9	8,489.9	8,992.5	8,907.8r	8,890.0r	9,118.2r	9,261.9r	9,317.8r	9,417.0

Sources: United States – U.S. Department of the Interior, Bureau of Mines.
Other Countries – ABMS; Metallgesellschaft; CDA.
p - preliminary r - revised

Table 1, Item 2.

Imports and exports of copper ore in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Imports (Ore, Concentrate, Matte)	33.0	27.6	39.1	33.8	31.3	55.0	42.9	56.0	74.0	89.6	58.0	33.2	25.2	16.5	36.0	108.1	102.8	17.1	7.7	6.0	12.8
Exports (Ore, Concentrate, Matte)	–38.7	–65.0	–1.2	–61.5	–8.2	–19.6	–23.5	–19.3	–8.3	–14.8	–15.8	–19.3	–49.1	–117.7	–166.2	–215.2	–47.1	–67.3	–128.2	–192.2	–137.5
Net Imports (Ore, Concentrate, Matte)	**–5.7**	**–37.4**	**37.9**	**–27.7**	**23.1**	**35.4**	**19.4**	**36.7**	**65.7**	**74.8**	**42.2**	**13.9**	**–23.9**	**–101.2**	**–130.2**	**–107.1**	**55.7**	**–50.2**	**–120.5**	**–186.2**	**–124.7**

Source: U.S. Department of Commerce, Bureau of the Census.
p - preliminary

Table 1, Item 8.

Smelter production of copper in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Smelter Production – Domestic Ore (Table 1, Item 6)	841.3	1,234.7	1,547.5	1,605.2	1,470.8	1,649.1	1,705.1	1,532.1	1,374.3	1,461.3	1,394.4	1,399.9	1,447.6	1,096.2	1,427.5	1,036.8	979.0	1,091.2	1,035.4r	1,001.0r	1,073.7
Smelter Production – Foreign Ore (Table 1, Item 6)	21.0	31.8	38.0	36.1	29.2	41.3	38.9	37.8	72.8	73.4	40.8	20.3	24.7	15.3	24.0	38.7	43.7	26.7	1.6r	–	–
Smelter Production – Scrap (Table 1, Item 7)	70.7	84.8	77.3	78.9	66.3	69.0	77.8	79.5	49.4	51.0	49.4	59.8	66.4	49.5	67.1	49.7	65.3	186.6	275.7r	317.3r	321.6
TOTAL SMELTER PRODUCTION	**933.0**	**1,351.3**	**1,662.8**	**1,720.2**	**1,566.3**	**1,759.4**	**1,821.8**	**1,649.4**	**1,496.5**	**1,585.7**	**1,484.6**	**1,480.0**	**1,538.7**	**1,161.0**	**1,518.6**	**1,125.2**	**1,088.0**	**1,304.5**	**1,312.7r**	**1,318.3r**	**1,395.3**

Source: U.S. Department of the Interior, Bureau of Mines.
p - preliminary r - revised

Table 1, Item 9.

Imports and exports of blister copper in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Imports of Blister Copper	269.3	270.7	237.9	224.4	156.7	157.4	154.1	207.8	88.9	43.8	44.7	81.4	75.1	51.8	81.3	114.0	87.6	66.3	31.4	51.0	48.0
Exports of Blister Copper	–21.0	–15.7	–4.3	–7.8	–28.7	–8.5	–7.5	–2.7	–1.5	–2.7	–16.4	–11.4	–8.2	–4.2	–10.2	–2.2	–8.2	–9.2	–19.8	–17.6	–13.6
Net Imports of Blister Copper	**248.3**	**255.0**	**233.6**	**216.6**	**128.0**	**148.9**	**146.6**	**205.1**	**87.4**	**41.1**	**28.3**	**70.0**	**66.9**	**47.6**	**71.1**	**111.8**	**79.4**	**57.1**	**11.6**	**33.4**	**34.4**

Source: U.S. Department of Commerce, Bureau of the Census.
p - preliminary

Table 1, Item 10.

Blister stocks and other

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
End-of-Year Blister Copper Stocks	220.0	272.0	291.0	340.0	303.0	282.0	265.0	324.0	312.0	321.0	346.0	290.0	303.1	299.8	305.3	256.8	191.8	270.1	160.9	148.8	164.2
Net Change[(a)]	−50.0	52.0	19.0	49.0	−37.0	−21.0	−17.0	59.0	−12.0	9.0	25.0	−56.0	13.1	−3.3	5.5	−48.5	−65.0	78.3	−109.2	−12.1	15.4
Apparent Change[(b)]	−22.4	84.1	76.3	92.8	36.2	−12.0r	48.6r	143.5r	122.1r	140.4r	106.8r	1.4r	−20.8r	−46.0r	−1.8r	−19.7r	−61.3r	31.5r	4.1r	−10.4r	20.0

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Net Change – the year-to-year increase (+) or decrease (–) of blister copper stocks as reported.
(b) - Apparent Change – the difference between Line 11 and the sum of Lines 8 & 9 in Table 1, required to rationalize the CDA flow sheet. Factors other than changes in stocks are included in the apparent change. The sign of the data (+ or –) is opposite that shown in Table 1.

Table 1, Item 13.

Production of refined copper in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Refined Production - Primary Sources (Table 1, Items 1, 2, 4, 9 & 10)	1,133.0	1,437.4	1,742.8	1,765.1	1,591.8	1,873.2	1,868.5	1,654.7	1,443.4	1,539.3	1,496.2	1,597.3	1,670.4	1,334.7	1,[illegible]	1,352.3	1,303.0	1,283.8	1,165.3	1,183.0r	1,263.2
Refined Production - Scrap at Smelters (Table 1, Item 7)	70.7	84.8	77.3	78.9	66.3	69.0	77.8	79.5	49.4	51.0	49.4	59.8	66.4	49.5	67.1	49.7	65.3	186.6	275.7r	317.3r	321.6
Refined Production - Scrap at Refiners (Table 1, Item 12)	322.9	316.8	394.8	398.7	304.3	316.3	366.3	404.4	282.1	300.2	303.0	362.3	441.2	474.3	465.1	465.7	377.5	171.5	140.4r	130.5r	135.4
TOTAL REFINED PRODUCTION	1,526.6	1,839.0	2,214.9	2,242.7	1,962.4	2,258.5	2,312.6	2,138.6	1,774.9	1,890.5	1,848.6	2,019.4	2,178.0	1,858.5	2,234.2	1,867.7	1,745.8	1,641.9	1,581.4r	1,630.8r	1,720.2

Sources: U.S. Department of the Interior, Bureau of Mines: U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary r - revised

Table 1, Item 14.

Imports and exports of refined copper in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Imports of Refined Copper	330.3	400.3	131.2	132.1	164.0	192.4	199.9	303.9	146.0	380.7	390.8	455.8	237.2	505.0	391.2	313.9	532.4	555.9	420.1	542.0	557.0
Exports of Refined Copper	−161.6	−251.0	−215.0	−222.0	−187.7	−182.7	−191.1	−126.7	−172.4	−114.6	−63.0	−113.1	−90.1	−23.9	−66.0	−39.7	−97.2	−105.5	−69.8	−17.1	−19.8
Net Imports of Refined Copper	**168.7**	**149.3**	**−83.8**	**−89.9**	**−23.7**	**9.7**	**8.8**	**177.2**	**−26.4**	**266.1**	**327.8**	**342.7**	**147.1**	**481.1**	**325.2**	**274.2**	**435.2**	**450.4**	**350.3**	**524.9**	**537.2**

Source: U.S. Department of Commerce, Bureau of the Census.
p - preliminary

Table 1, Item 15.

Refined stocks and other

COPPER CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
End-of-Year Refined Copper Stocks at:																					
Refineries	41.7	44.9	41.9	142.7	82.7	99.6	43.2	151.6	260.7	272.8	286.7	188.3	78.4	73.4	151.0	210.1	66.1	193.4	150.4	145.1	63.1
Wire Rod Mills	47.0	54.0	63.0	134.0	120.0	75.0	61.0	131.0	140.0	133.0	116.3	69.7	48.7	54.6	120.3	137.8	127.9	147.7	110.2r	72.8r	30.9
Brass Mills	51.0	57.0	56.0	49.0	50.0	35.0	43.0	42.0	33.0	39.0	34.2	30.7	27.0	24.5	29.2	28.0	28.7	29.8	22.0	15.4	14.3
Other Processors	5.0	4.0	6.0	4.0	6.0	5.4	5.6	6.9	6.1	7.0	7.0	7.5	10.4	11.3	9.4	8.4	9.2	8.1	8.1	8.8	9.9
Government	275.2	261.4	253.4	253.4	251.6	226.6	217.8	35.3	26.2	42.1	22.6	22.5	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
Commodity Exchange	13.7	11.7	4.0	17.9	20.3	57.8	5.9	43.3	100.0	201.0	184.4	179.6	107.9	179.6	187.6	274.5	409.2	276.3	120.3	93.3	18.3
End-of-Year Total	**433.6**	**433.0**	**424.3**	**601.0**	**530.6**	**499.4**	**376.5**	**410.1**	**566.0**	**694.9**	**651.2**	**498.3**	**294.7**	**365.7**	**519.8**	**681.1**	**663.4**	**677.6**	**433.3r**	**357.7r**	**158.8**
Net Change[a]	−258.5	−0.6	−8.7	176.7	−70.4	−31.2	−122.9	33.6	155.9	128.9	−43.7	−152.9	−203.6	71.0	154.1	161.3	−17.7	14.2	−244.3r	−75.6r	−198.9
Apparent Change[b]	−288.3	109.9	−19.1	102.3	−82.3	30.8	−126.9	112.3	206.2	159.1	−16.8	−59.6	−60.9	280.8	322.3	307.5	184.2	−247.6	−226.6r	−153.8r	−137.8

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Net Change – the year-to year increase (+) or decrease (–) of refined copper stocks as reported.
(b) - Apparent Change – the difference between Line 16 and the sum of Lines 13 & 14 in Table 1, required to rationalize the CDA flow sheet. Factors other than changes in stocks are included in the apparent change. The sign of the data (+ or –) is opposite that shown in Table 1.

Table 1, Item 16.

Consumption of refined copper in the United States

COPPER CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Consumption of Refined Copper by:																					
Wire Rod Mills	1,274.0	1,186.0	1,295.0	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1r	1,644.4r	1,742.5
Brass Mills	658.9	653.6	799.1	660.6	655.8	667.2	714.4	670.2	439.0	584.8	628.6	682.6	672.6	564.0	591.1	433.4	551.4	635.1	566.6r	617.6r	601.8
Ingot Makers	8.6	5.7	6.7	6.8	4.5	6.0	6.1	9.2	4.5	7.5	6.6	8.2	6.9	5.5	6.0	4.8	4.9	7.6	5.9	5.8	6.0
Foundries	22.2	14.9	23.8	23.7	17.5	17.9	30.6	28.7	21.7	21.0	22.5	22.1	19.9	18.2	17.7	15.1	15.6	17.7	15.9	16.2	18.0
Powder Plants	6.5	7.7	9.8	6.5	7.2	9.5	12.7	12.0	6.8	11.8	11.3	11.5	11.6	8.3	8.3	7.5	8.5	8.7	8.1	7.9	8.7
Other Industries[a]	13.4	10.5	15.8	14.2	11.1	10.7	12.2	9.1	9.0	8.4	13.0	24.6	22.0	20.0	16.1	14.6	16.6	12.2	16.7	17.6	18.2
TOTAL REFINED CONSUMPTION	**1,983.6**	**1,878.4**	**2,150.2**	**2,050.5**	**2,021.0**	**2,237.6**	**2,448.3**	**2,203.5**	**1,542.3**	**1,997.5**	**2,193.2**	**2,421.7**	**2,386.0**	**2,058.8**	**2,237.1**	**1,834.4**	**1,996.8**	**2,339.9**	**2,158.3r**	**2,309.5r**	**2,395.2**

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary r - revised
(a) - Chemical, steel, aluminum and other industries.

Table 2

Supply of secondary copper from receipt to consumption by brass mills, ingot makers, foundries, powder plants and other industries

COPPER CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
(1) Receipts of Domestic Scrap	1,309.3	1,368.2	1,552.8	1,447.6	1,334.9	1,440.8	1,560.9	1,504.3	1,113.0	1,271.1	1,318.4	1,426.9	1,661.6	1,541.8	1,553.4	1,317.1	1,302.8	1,371.7	1,474.4r	1,481.9r	1,545.9
(2) Net Scrap Exports (page 12)[a]	−45.1	−76.6	−46.9	−79.0	−50.7	−39.2	−81.4	−70.5	−84.3	−54.1	−58.5	−95.9	−100.7	−120.8	−80.0	−81.8	−45.9	−98.8	−193.6	−189.0	−169.1
(3) Scrap Stocks (page 12)	−18.0	32.0	−15.0	−13.0	17.0	7.0	−2.0	−3.0	5.0	−19.0	−10.9	22.7	−10.6	12.1	−10.0	9.2	7.3	9.2	−23.5	22.8	0.2
(4) Recovery From Copper-Base Scrap (page 13)	1,246.2	1,323.6	1,490.9	1,355.6	1,301.2	1,406.6	1,477.5	1,430.8	1,033.7	1,198.0	1,249.0	1,353.7	1,550.3	1,433.1	1,463.4	1,244.5	1,264.2	1,282.1	1,257.3r	1,315.7r	1,377.0
(5) Recovery From Other Scrap (page 13)	16.4	16.0	19.0	16.8	17.0	19.7	21.1	21.1	28.1	35.7	37.9	39.8	42.5	38.9	42.9	40.6	42.7	43.2	43.0	44.6r	46.5
(6) Total Scrap Recovery (page 13)	1,262.6	1,339.6	1,509.9	1,372.4	1,318.2	1,428.3	1,498.6	1,451.9	1,061.8	1,233.7	1,286.9	1,393.5	1,592.8	1,472.0	1,506.3	1,285.1	1,306.9	1,325.3	1,300.3r	1,360.3r	1,423.5
(7) Smelter Production From Scrap	−70.7	−84.8	−77.3	−78.9	−66.3	−69.0	−77.8	−79.5	−49.4	−51.0	−49.4	−59.8	−66.4	−49.5	−67.1	−49.7	−65.3	−186.6	−275.7r	−317.3r	−321.6
(8) Refined Production From Scrap	−322.9	−316.8	−394.8	−398.7	−304.3	−316.3	−366.3	−404.4	−282.1	−300.2	−303.0	−362.3	−441.2	−474.3	−465.1	−465.7	−377.5	−171.5	−140.4r	−130.5r	−135.4
(9) Consumption of Scrap (page 13)	869.0	938.0	1,037.8	894.8	947.6	1,043.0	1,054.5	968.0	730.3	882.5	934.5	971.4	1,085.2	948.2	974.1	769.7	864.1	967.2	884.2r	912.5r	966.5

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.

p - preliminary r - revised

(a) - Negative (−) signs denote net exports.

Table 2, Item 2.

Imports and exports of copper-base scrap in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Imports of Copper-Base Scrap	11.4	12.5	7.7	3.8	13.8	18.8	27.1	41.7	20.2	29.4	28.6	28.8	32.0	32.5	38.8	38.8	60.1	59.6	50.9	61.6	73.0
Exports of Copper-Base Scrap	−56.5	−89.1	−54.6	−82.8	−64.5	−58.0	−108.5	−112.2	−104.5	−83.5	−87.1	−124.7	−132.7	−153.3	−118.8	−120.6	−106.0	−158.4	−244.5	−250.6	−242.1
Net Exports of Copper-Base Scrap[(a)]	**−45.1**	**−76.6**	**−46.9**	**−79.0**	**−50.7**	**−39.2**	**−81.4**	**−70.5**	**−84.3**	**−54.1**	**−58.5**	**−95.9**	**−100.7**	**−120.8**	**−80.0**	**−81.8**	**−45.9**	**−98.8**	**−193.6**	**−189.0**	**−169.1**

Sources: U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary
(a) - The negative (−) sign for each year is used to be consistent with the convention used in Tables 1, 2 and 4 — namely that imports are **additions** to the domestic flow, and therefore (+), while exports are **subtractions** from the flow, and therefore (−).

Table 2, Item 3.

Copper-base scrap stocks

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Scrap Copper-Base Stocks at:																					
Brass Mills	61.0	39.0	39.0	43.0	37.0	36.0	44.0	45.0	46.0	48.0	54.7	44.4	45.6	44.9	39.7	45.6	39.8	40.3	30.9	32.9	39.8
Secondary Smelters	26.0	22.0	21.0	19.0	24.0	22.0	23.0	24.0	27.0	28.0	33.2	26.0	30.1	30.5	41.7	23.7	18.0	23.5			
Primary Producers	22.0	20.0	36.0	49.0	27.0	24.0	19.0	18.0	12.0	25.0	27.7	22.1	27.5	16.6	19.1	23.7	28.2	14.3	68.9	46.8	39.8
Foundries	13.0	10.0	10.0	8.0	14.0	13.0	11.0	13.0	11.0	13.0	11.3	10.8	10.7	9.9	11.1	9.8	9.5	8.5	9.9	7.8	7.8
Other Processors	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	2.0	2.9	2.9	2.8	3.1	2.7	2.7	2.4	2.8	2.2	2.1
End-of-Year Total	**127.0**	**95.0**	**110.0**	**123.0**	**106.0**	**99.0**	**101.0**	**104.0**	**99.0**	**118.0**	**128.9**	**106.2**	**116.8**	**104.7**	**114.7**	**105.5**	**98.2**	**89.0**	**112.5**	**89.7**	**89.5**
Net Change[(a)]	18.0	−32.0	15.0	13.0	−17.0	−7.0	2.0	3.0	−5.0	19.0	10.9	−22.7	10.6	−12.1	10.0	−9.2	−7.3	−9.2	23.5	−22.8	−0.2

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary
(a) - Net Change — the year-to-year increase (+) or decrease (−) of stocks as reported. The sign of the data (+ or −) is opposite that shown in Table 2.

Table 2, Item 6.

Recovery of copper from scrap

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Copper Recovered From Copper-Base Scrap																					
New Scrap	673.7	719.9	804.9	734.2	752.5	854.4	901.9	864.2	593.6	716.1	731.2	790.4	947.0	828.6	859.7	687.3	708.7	719.9	697.0r	693.7r	734.0
Old Scrap	572.5	603.7	686.0	621.4	548.7	554.2	575.6	566.6	440.1	481.9	517.8	563.3	603.3	604.5	603.7	557.2	555.5	562.2	560.3r	622.0r	643.0
Total (Table 2, Item 4)	**1,246.2**	**1,323.6**	**1,490.9**	**1,355.6**	**1,301.2**	**1,408.6**	**1,477.5**	**1,430.8**	**1,033.7**	**1,198.0**	**1,249.0**	**1,353.7**	**1,550.3**	**1,433.1**	**1,463.4**	**1,244.5**	**1,264.2**	**1,282.1**	**1,257.3r**	**1,315.7r**	**1,377.0**
Copper Recovered From Scrap Other Than Copper-Base																					
New Scrap	10.2	10.7	12.9	11.5	10.7	13.0	14.3	14.0	17.4	20.7	21.9	22.9	24.5	22.5	25.6	22.6	22.6	22.9	22.7	22.1r	23.3
Old Scrap	6.2	5.3	6.1	5.3	6.3	6.7	6.8	7.1	10.7	15.0	16.0	16.9	18.0	16.4	17.3	18.0	20.1	20.3	20.3	22.5r	23.2
Total (Table 2, Item 5)	**16.4**	**16.0**	**19.0**	**16.8**	**17.0**	**19.7**	**21.1**	**21.1**	**28.1**	**35.7**	**37.9**	**39.8**	**42.5**	**38.9**	**42.9**	**40.6**	**42.7**	**43.2**	**43.0**	**44.6r**	**46.5**
Copper Recovered From All Scrap																					
New Scrap	683.9	730.6	817.8	745.7	763.2	867.4	916.2	878.2	611.0	736.8	753.1	813.3	971.5	851.1	885.3	709.9	731.3	742.8	719.7r	715.8r	757.3
Old Scrap	578.7	609.0	692.1	626.7	555.0	560.9	582.4	573.7	450.8	496.9	533.8	580.2	621.3	620.9	621.0	575.2	575.6	582.5	580.6r	644.5r	666.2
Total Copper Recovered (Table 2, Item 6)	**1,262.6**	**1,339.6**	**1,509.9**	**1,372.4**	**1,318.2**	**1,428.3**	**1,498.6**	**1,451.9**	**1,061.8**	**1,233.7**	**1,286.9**	**1,393.5**	**1,592.8**	**1,472.0**	**1,506.3**	**1,285.1**	**1,306.9**	**1,325.3**	**1,300.3r**	**1,360.3r**	**1,423.5**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised

Table 2, Item 9.

Consumption of copper scrap in the United States

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Consumption of Copper Scrap by:																					
Brass Mills	406.9	475.9	516.6	446.5	496.6	578.4	612.5	563.0	406.3	519.3	531.9	541.7	608.0	532.3	559.3	448.2	540.9	583.8	529.2r	555.4r	589.1
Ingot Makers	271.9	278.8	290.3	241.4	257.9	250.5	236.7	215.0	164.0	173.0	195.0	205.5	238.2	214.0	213.0	173.2	176.4	219.5	202.4	200.6r	208.3
Foundries	133.6	126.6	147.4	129.7	113.4	121.7	122.7	115.4	90.9	95.7	101.2	105.2	113.0	87.0	84.7	72.1	74.3	84.2	78.7	79.9	89.0
Powder Plants	16.1	18.1	16.5	12.2	16.5	16.0	17.3	17.7	11.6	16.8	18.3	18.5	18.1	12.8	12.9	10.1	13.2	13.1	12.2	11.9	13.0
Other Industries[a]	40.5	38.6	67.0	65.0	63.2	76.4	65.3	56.9	57.5	77.7	88.1	100.5	107.9	102.1	104.2	66.1	59.3	66.6	61.7	64.7	67.1
TOTAL COPPER CONSUMED	**869.0**	**938.0**	**1,037.8**	**894.8**	**947.6**	**1,043.0**	**1,054.5**	**968.0**	**730.3**	**882.5**	**934.5**	**971.4**	**1,085.2**	**948.2**	**974.1**	**769.7**	**864.1**	**967.2**	**884.2r**	**912.5r**	**966.5**

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary r - revised
(a) - Chemical, steel, aluminum and other industries.

Table 3

Consumption of metals by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries

	METAL CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
(1) Consumption of Refined Copper (Table 1, Item 16)	1,983.6	1,878.4	2,150.2	2,050.5	2,021.0	2,237.6	2,448.3	2,203.5	1,542.3	1,997.5	2,193.2	2,421.7	2,386.0	2,058.8	2,237.1	1,834.4	1,996.8	2,339.9	2,158.3r	2,309.5r	2,395.2
(2) Consumption of Copper in Scrap (Table 2, Item 9)	869.0	938.0	1,037.8	894.8	947.6	1,043.0	1,054.5	968.0	730.3	882.5	934.5	971.4	1,085.2	948.2	974.1	769.7	864.1	967.2	884.2r	912.5r	966.5
(3) Total Copper Consumed (page 15)	**2,852.6**	**2,816.4**	**3,188.0**	**2,945.3**	**2,968.6**	**3,280.6**	**3,502.8**	**3,171.5**	**2,272.6**	**2,880.0**	**3,127.7**	**3,393.1**	**3,471.2**	**3,007.0**	**3,211.2**	**2,604.1**	**2,860.9**	**3,307.1**	**3,042.5r**	**3,222.0r**	**3,361.7**
(4) Consumption of Zinc	274.7	327.1	376.3	268.1	316.3	387.0	381.0	347.2	234.7	323.1	328.8	347.8	358.9	298.1	313.7	246.6	302.1	353.3r	286.7r	295.6r	327.8
(5) Consumption of Lead	30.9	31.7	33.7	27.4	25.6	26.1	28.8	28.1	19.7	26.0	30.0	30.1	30.8	25.7	26.0	22.4	25.3	30.8r	27.5r	27.5r	29.2
(6) Consumption of Tin	19.7	19.3	19.4	15.9	15.2	22.6	16.3	16.2	11.7	14.4	16.7	16.4	16.4	14.2	14.5	11.7	12.4	15.2r	13.9r	13.8r	14.7
(7) Consumption of Nickel	10.8	6.6	10.1	10.3	11.5	11.2	17.2	12.0	12.0	9.7	8.1	7.4	11.2	10.6	14.3	5.8	8.9	10.3r	8.5r	8.8r	9.8
(8) Total Alloying Metal Consumed (page 16)	**336.1**	**384.7**	**439.5**	**341.7**	**368.6**	**446.9**	**443.3**	**403.5**	**278.1**	**373.2**	**383.6**	**401.7**	**417.3**	**348.6**	**368.5**	**286.5**	**348.7**	**409.6r**	**336.6r**	**345.7r**	**381.5**
(9) Total Metal Consumed	**3,188.7**	**3,201.1**	**3,627.5**	**3,287.0**	**3,337.2**	**3,727.5**	**3,946.1**	**3,575.0**	**2,550.7**	**3,253.2**	**3,511.3**	**3,794.8**	**3,888.5**	**3,355.6**	**3,579.7**	**2,890.6**	**3,209.6**	**3,716.7r**	**3,379.1r**	**3,567.7r**	**3,743.2**
(10) Ingot Consumed (page 17)[a]	323.9	326.5	336.6	256.8	276.8	301.3	300.0	284.7	194.3	236.5	258.2	256.6	266.2	235.6	239.6	191.8	197.5	205.0r	190.2r	196.1r	214.2
(11) Ingot Stocks & Other (page 17)[a,b]	−31.6	−37.8	−43.6	−55.9	−56.6	−32.1	−10.9	−7.2	−24.7	−7.2	−14.2	−21.4	−44.0	−41.2	−43.0	−41.1	−46.1	−100.2r	−89.8r	−81.3r	−73.8
(12) Net Metal Consumed (page 17)	**3,157.1**	**3,163.3**	**3,583.9**	**3,231.1**	**3,280.6**	**3,695.4**	**3,935.2**	**3,567.8**	**2,526.0**	**3,246.0**	**3,497.1**	**3,773.4**	**3,844.5**	**3,314.4**	**3,536.7**	**2,849.5**	**3,163.5**	**3,616.5r**	**3,289.3r**	**3,486.4r**	**3,669.4**
(13) Wire Rod Mills - Net Metal Consumed (page 17)	1,274.0	1,186.0	1,295.0	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1r	1,644.4r	1,742.5
(14) Wire Rod & Wire Mills - Metal Stocks & Oth	−96.0	−79.5	−33.0	−116.7	−68.4	−169.8	−206.3	−148.8r	−22.8r	−156.0r	−82.7r	−165.2r	−106.0r	−54.3r	−160.4r	−44.0r	−73.3r	−153.6r	−81.1r	−147.4r	−162.0
(15) Wire Mills - Metal Contained in Products Supplied (Table 4, Item 10)	1,178.0	1,106.5	1,262.0	1,222.0	1,256.5	1,356.5	1,466.0	1,325.5r	1,038.5r	1,208.0r	1,428.5r	1,507.5r	1,547.0r	1,388.5r	1,437.5r	1,315.0r	1,326.5r	1,505.0r	1,464.0r	1,497.0r	1,580.5
(16) Brass Mills - Net Metal Consumed (page 17)	1,312.8	1,421.2	1,657.3	1,371.4	1,448.5	1,615.4	1,700.2	1,577.6	1,067.2	1,407.3	1,464.6	1,549.6	1,619.3	1,380.6	1,461.1	1,116.4	1,383.3	1,555.8r	1,363.5r	1,452.7r	1,502.9
(17) Brass Mills - Metal Stocks & Other	−14.8	−43.2	−102.3	−118.4	−106.5	−111.4	−63.7	−167.1	−36.2	−113.3	−91.6	−95.1	−97.3	−114.1	−146.1	98.9	−193.3	−188.3r	−155.5r	−201.7r	−108.4
(18) Brass Mills - Metal Contained in Products Supplied (Table 4, Item 16)	1,298.0	1,378.0	1,555.0	1,253.0	1,342.0	1,504.0	1,636.5	1,410.5	1,031.0	1,294.0	1,373.0	1,454.5	1,522.0	1,266.5	1,315.0	1,017.5	1,190.0	1,367.5	1,208.0	1,251.0r	1,394.5
(19) Foundries - Net Metal Consumed (page 17)	419.4	422.6	468.1	378.0	364.6	394.0	404.9	380.3	276.0	299.4	326.2	346.2	353.5	297.5	292.4	235.7	243.9	261.3r	242.4r	245.9r	273.9
(20) Foundries - Metal Stocks & Other	−8.4	−17.6	−28.6	13.0	1.9	−2.0	5.1	−14.3	39.5	3.6	−5.2	−15.2	9.5	−11.5	−10.4	−13.7	5.1	−9.3r	−7.4r	−8.4r	−9.4
(21) Foundries - Metal Contained in Products Supplied (Table 4, Item 17)	411.0	405.0	439.5	391.0	366.5	392.0	410.0	366.0	315.5	303.0	321.0	331.0	363.0	286.0	282.0	222.0	249.0r	252.0	235.0	237.5r	264.5
(22) Powder Plants - Net Metal Consumed (page 17)	34.1	37.1	38.0	29.7	32.3	34.6	41.3	36.6	21.8	34.4	36.5	37.4	36.6	26.0	26.1	21.7	26.8	26.9r	25.0	24.5	26.9
(23) Powder Plants - Metal Stocks & Other	−6.1	−6.1	−7.5	−6.2	−6.3	−7.6	−9.3	−2.1	1.2	−1.9	−4.5	−9.4	−9.6	−7.0	−4.1	−4.7	−7.3	−5.4r	−6.5	−7.0	−7.4
(24) Powder Plants - Metal Contained in Products Supplied (Table 4, Item 18)	28.0	31.0	30.5	23.5	26.0	27.0	32.0	34.5	23.0	32.5	32.0	28.0	27.0	19.0	22.0	17.0	19.5	21.5	18.5	17.5	19.5
(25) Other Industries - Net Metal Consumed (page 17)[c]	116.8	96.4	125.5	113.3	110.3	125.1	116.5	99.0	99.7	140.9	158.6	167.5	182.1	167.5	159.2	116.7	109.7	113.9r	113.3r	118.9	123.2

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.

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(a) - Ingot makers consume refined copper, scrap copper and alloying metal, and ship to foundries, brass mills, powder plants and other industries.

(b) - The difference between the copper and alloying metal consumed by ingot makers and the ingot consumed by the customers of the ingot makers. This difference consists of melting and other losses in producing ingot, stock changes, and other factors.

(c) - Chemical, steel, aluminum and other industries.

Table 3, Item 3.

Consumption of copper by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries

	COPPER CONTENT, thousands of short tons																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Consumption of Copper by:																					
Wire Rod Mills – Refined	1,274.0	1,186.0	1,295.0	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1r	1,644.4r	1,742.5
Brass Mills[a]																					
Refined	658.9	653.6	799.1	660.6	655.8	667.2	714.4	670.2	439.0	584.8	628.6	682.6	672.6	564.0	591.1	433.4	551.4	635.1	566.6r	617.6r	601.8
Scrap	406.9	475.9	516.6	446.5	496.6	578.4	612.5	563.0	406.3	519.3	531.9	541.7	608.0	532.3	559.3	448.2	540.9	583.8	529.2r	555.4r	589.1
Total	1,065.8	1,129.5	1,315.7	1,107.1	1,152.4	1,245.6	1,326.9	1,233.2	845.3	1,104.1	1,160.5	1,224.3	1,280.6	1,096.3	1,150.4	881.6	1,092.3	1,218.9	1,095.8r	1,173.0r	1,190.9
Ingot Makers[b]																					
Refined	8.6	5.7	6.7	6.8	4.5	6.0	6.1	9.2	4.5	7.5	6.6	8.2	6.9	5.5	6.0	4.8	4.9	7.6	5.9	5.8	6.0
Scrap	271.9	278.8	290.3	241.4	257.9	250.5	236.7	215.0	164.0	173.0	195.0	205.5	238.2	214.0	213.0	173.2	176.4	219.5	202.4	200.6r	208.3
Total	280.5	284.5	297.0	248.2	262.4	256.5	242.8	224.2	168.5	180.5	201.6	213.7	245.1	219.5	219.0	178.0	181.3	227.1	208.3	206.4r	214.3
Foundries[a]																					
Refined	22.2	14.9	23.8	23.7	17.5	17.9	30.6	28.7	21.7	21.0	22.5	22.1	19.9	18.2	17.7	15.1	15.6	17.7	15.9	16.2	18.0
Scrap	133.6	126.6	147.4	129.7	113.4	121.7	122.7	115.4	90.9	95.7	101.2	105.2	113.0	87.0	84.7	72.1	74.3	84.2	78.7	79.9	89.0
Total	155.8	141.5	171.2	153.4	130.9	139.6	153.3	144.1	112.6	116.7	123.7	127.3	132.9	105.2	102.4	87.2	89.9	101.9	94.6	96.1	107.0
Powder Plants[a]																					
Refined	6.5	7.7	9.8	6.5	7.2	9.5	12.7	12.0	6.8	11.8	11.3	11.5	11.6	8.3	8.3	7.5	8.5	8.7	8.1	7.9	8.7
Scrap	16.1	18.1	16.5	12.2	16.5	16.0	17.3	17.7	11.6	16.8	18.3	18.5	18.1	12.8	12.9	10.1	13.2	13.1	12.2	11.9	13.0
Total	22.6	25.8	26.3	18.7	23.7	25.5	30.0	29.7	18.4	28.6	29.6	30.0	29.7	21.1	21.2	17.6	21.7	21.8	20.3	19.8	21.7
Other Industries[a,c]																					
Refined	13.4	10.5	15.8	14.2	11.1	10.7	12.2	9.1	9.0	8.4	13.0	24.6	22.0	20.0	16.1	14.6	16.6	12.2	16.7	17.6	18.2
Scrap	40.5	38.6	67.0	65.0	63.2	76.4	65.3	56.9	57.5	77.7	88.1	100.5	107.9	102.1	104.2	66.1	59.3	66.6	61.7	64.7	67.1
Total	53.9	49.1	82.8	79.2	74.3	87.1	77.5	66.0	66.5	86.1	101.1	125.1	129.9	122.1	120.3	80.7	75.9	78.8	78.4	82.3	85.3
All Industries																					
Refined (Table 1, Item 16)	**1,983.6**	**1,878.4**	**2,150.2**	**2,050.5**	**2,021.0**	**2,237.6**	**2,448.3**	**2,203.5**	**1,542.3**	**1,997.5**	**2,193.2**	**2,421.7**	**2,386.0**	**2,058.8**	**2,237.1**	**1,834.4**	**1,996.8**	**2,339.9**	**2,158.3r**	**2,309.5r**	**2,395.2**
Scrap (Table 2, Item 9)	**869.0**	**938.0**	**1,037.8**	**894.8**	**947.6**	**1,043.0**	**1,054.5**	**968.0**	**730.3**	**882.5**	**934.5**	**971.4**	**1,085.2**	**948.2**	**974.1**	**769.7**	**864.1**	**967.2**	**884.2r**	**912.5r**	**966.5**
TOTAL COPPER CONSUMED (Table 3, Item 3)	**2,852.6**	**2,816.4**	**3,188.0**	**2,945.3**	**2,968.6**	**3,280.6**	**3,502.8**	**3,171.5**	**2,272.6**	**2,880.0**	**3,127.7**	**3,393.1**	**3,471.2**	**3,007.0**	**3,211.2**	**2,604.1**	**2,860.9**	**3,307.1**	**3,042.5r**	**3,222.0r**	**3,361.7**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Direct consumption only; not including consumption of copper in ingots from ingot makers.
(b) - Ingot makers consume refined copper, scrap copper and alloying metal, and ship to foundries, brass mills, powder plants and other industries.
(c) - Chemical, steel, aluminum and other industries.

Table 3, Item 8.

Consumption of alloying metal by brass mills, ingot makers, foundries and powder plants

ALLOYING METAL CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Consumption of Alloying Metal by:																					
Brass Mills[a]																					
Zinc-Slab	116.9	145.9	158.7	112.2	134.8	177.4	183.6	167.6	104.8	153.1	154.5	162.2	167.0	138.0	147.9	111.7	130.6	151.5	120.1	124.8	139.8
Zinc in Scrap	108.9	126.7	156.6	128.8	129.8	156.2	149.2	132.6	94.7	124.5	125.5	139.8	147.3	122.1	122.3	98.9	126.0	148.5r	117.7r	122.3r	137.0
Lead-Refined	2.3	2.8	3.7	2.5	3.1	3.8	4.9	4.1	2.0	3.5	3.3	3.7	3.9	2.7	2.8	1.6	3.2	3.7r	3.0r	3.1r	3.5
Lead in Scrap	2.9	3.6	4.7	3.2	2.9	3.6	3.6	3.3	2.3	3.4	4.5	3.8	4.0	3.3	3.1	2.4	3.4	3.9r	3.2r	3.3r	3.7
Tin-Refined	1.2	1.2	1.5	1.2	1.1	1.0	1.1	1.1	0.6	0.8	0.7	0.8	0.8	0.8	0.8	0.4	0.5	0.6	0.5r	0.5r	0.6
Tin in Scrap	0.5	0.5	0.7	0.5	0.4	0.5	0.5	0.5	0.3	0.3	0.6	0.5	0.5	0.4	0.3	0.4	0.5	0.6r	0.5r	0.5r	0.6
Nickel-Refined	3.6	3.4	5.9	5.1	6.1	6.5	5.4	7.1	7.5	5.5	4.6	4.8	7.6	8.4	11.3	3.5	5.3	6.1r	5.0r	5.2r	5.8
Nickel in Scrap	6.3	2.4	3.3	4.6	4.7	4.1	10.5	4.2	4.1	3.8	3.1	2.2	3.1	1.8	2.6	1.9	3.2	3.7r	3.0r	3.1r	3.5
Total	242.6	286.5	335.1	258.1	282.9	353.1	358.8	320.5	216.3	294.9	296.8	317.8	334.2	277.5	291.1	220.8	274.7	318.6r	253.0r	262.8r	294.5
Ingot Makers																					
Zinc-Slab	8.1	12.2	13.6	9.9	10.4	7.1	6.9	8.2	6.6	7.7	8.3	7.3	7.5	18.9	22.2	14.6	18.1	22.7r	20.8	20.6r	21.4
Zinc in Scrap	31.3	32.8	34.5	26.7	31.2	33.9	29.4	28.2	20.8	26.8	29.1	25.0	25.2	9.9	12.2	14.2	17.6	22.1r	20.3	20.1r	20.9
Lead in Scrap	20.1	19.9	20.1	16.1	16.8	16.2	18.0	18.1	13.4	16.9	19.7	19.2	19.4	17.1	17.5	16.5	16.8	21.0r	19.3	19.1r	19.8
Tin in Scrap	14.6	14.1	14.1	11.2	11.5	19.1	12.5	12.5	9.3	11.4	13.3	12.4	12.5	11.0	11.3	9.2	9.4	11.8r	10.8	10.7	11.1
Nickel in Scrap	0.9	0.8	0.9	0.6	0.7	0.6	1.3	0.7	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Total	75.0	79.8	83.2	64.5	70.6	76.9	68.1	67.7	50.5	63.2	70.8	64.3	65.1	57.3	63.6	54.9	62.3	78.1r	71.7	71.0r	73.7
Foundries[a]																					
Zinc-Slab	2.3	2.3	6.0	4.6	4.5	6.8	6.0	4.4	3.1	4.2	4.5	4.9	4.0	3.1	3.2	2.4	2.5	2.8r	2.6r	2.6r	2.9
Zinc in Scrap	3.4	3.4	3.4	3.2	2.7	2.8	2.7	3.5	3.0	4.1	4.2	5.6	5.2	4.2	4.0	3.2	3.3	3.7r	3.4r	3.4r	3.8
Lead in Scrap	5.6	5.4	5.2	5.6	2.8	2.5	2.3	2.6	2.0	2.2	2.5	3.4	3.5	2.6	2.6	1.9	1.9	2.2r	2.0r	2.0r	2.2
Tin in Scrap	2.0	1.9	1.8	2.0	1.1	1.0	1.0	1.1	0.9	0.9	1.1	1.6	1.6	1.3	1.4	1.1	1.3	1.5	1.4	1.4	1.6
Total	13.3	13.0	16.4	15.4	11.1	13.1	12.0	11.6	9.0	11.4	12.3	15.5	14.3	11.2	11.2	8.6	9.0	10.2r	9.4r	9.4r	10.5
Powder Plants[a]																					
Zinc-Slab	3.0	1.6	1.2	1.0	0.7	0.7	1.1	1.3	0.8	1.2	1.6	1.6	1.6	1.1	1.1	0.9	1.1	1.1r	1.0	1.0	1.1
Zinc in Scrap	0.8	2.2	2.3	1.7	2.2	2.1	2.1	1.4	0.9	1.5	1.1	1.4	1.1	0.8	0.8	0.7	0.9	0.9r	0.8	0.8	0.9
Tin-Refined	1.4	1.6	1.3	1.0	1.1	1.0	1.2	1.0	0.6	1.0	1.0	1.1	1.0	0.7	0.7	0.6	0.7	0.7r	0.7	0.7	0.8
Total	5.2	5.4	4.8	3.7	4.0	3.8	4.4	3.7	2.3	3.7	3.7	4.1	3.7	2.6	2.6	2.2	2.7	2.7r	2.5	2.5	2.8
All Industries																					
Zinc-Slab	130.3	162.0	179.5	127.7	150.4	192.0	197.6	181.5	115.3	166.2	168.9	176.0	180.1	161.1	174.4	129.6	152.3	178.1r	144.5r	149.0r	165.2
Zinc in Scrap	144.4	165.1	196.8	160.4	165.9	195.0	183.4	165.7	119.4	156.9	159.9	171.8	178.8	137.0	139.3	117.0	149.8	175.2r	142.2r	146.6r	162.6
Lead-Refined	2.3	2.8	3.7	2.5	3.1	3.8	4.9	4.1	2.0	3.5	3.3	3.7	3.9	2.7	2.8	1.6	3.2	3.7r	3.0r	3.1r	3.5
Lead in Scrap	26.6	26.9	30.0	24.9	22.5	22.3	23.9	24.0	17.7	22.5	26.7	26.4	26.9	23.0	23.2	20.8	22.1	27.1r	24.5	24.4	25.7
Tin-Refined	2.6	2.8	2.8	2.2	2.2	2.0	2.3	2.1	1.2	1.8	1.7	1.9	1.8	1.5	1.5	1.0	1.2	1.3r	1.2r	1.2r	1.4
Tin in Scrap	17.1	16.5	16.6	13.7	13.0	20.6	14.0	14.1	10.5	12.6	15.0	14.5	14.6	12.7	13.0	10.7	11.2	13.9r	12.7r	12.6r	13.3
Nickel-Refined	3.6	3.4	5.9	5.1	6.1	6.5	5.4	7.1	7.5	5.5	4.6	4.8	7.6	8.4	11.3	3.5	5.3	6.1r	5.0r	5.2r	5.8
Nickel in Scrap	7.2	3.2	4.2	5.2	5.4	4.7	11.8	4.9	4.5	4.2	3.5	2.6	3.6	2.2	3.0	2.3	3.6	4.2r	3.5r	3.6r	4.0
TOTAL ALLOYING METAL CONSUMED (Table 3, Item 8)	336.1	384.7	439.5	341.7	368.6	446.9	443.3	403.5	278.1	373.2	383.6	401.7	417.3	348.6	368.5	286.5	348.7	409.6r	336.6r	345.7r	381.5

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Direct consumption only: not including consumption of alloying metal in ingots from ingot makers.

Table 3, Item 12.

Net consumption of metals by wire rod mills, brass mills, foundries, powder plants, and other industries

METAL CONTENT, thousands of short tons

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Net Metal Consumed by:																					
Wire Rod Mills - Copper (Table 3, Item 13)	1,274.0	1,186.0	1,295.0	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1r	1,644.4r	1,742.5
Brass Mills																					
Copper	1,065.8	1,129.5	1,315.7	1,107.1	1,152.4	1,245.6	1,326.9	1,233.2	845.3	1,104.1	1,160.5	1,224.3	1,280.6	1,096.3	1,150.4	881.6	1,092.3	1,218.9	1,095.8r	1,173.0r	1,190.9
Alloy	242.6	286.5	335.1	258.1	282.9	353.1	358.8	320.5	216.3	294.9	296.8	317.8	334.2	277.5	291.1	220.8	274.7	318.6r	253.0r	262.8r	294.5
Ingot	4.4	5.2	6.5	6.2	13.2	16.7	14.5	23.9	5.6	8.3	7.3	7.5	4.5	6.8	19.6	14.0	16.3	18.3	14.7r	16.9r	17.5
Total (Table 3, Item 16)	1,312.8	1,421.2	1,657.3	1,371.4	1,448.5	1,615.4	1,700.2	1,577.6	1,067.2	1,407.3	1,464.6	1,549.6	1,619.3	1,380.6	1,461.1	1,116.4	1,383.3	1,555.8r	1,363.5r	1,452.7r	1,502.9
Foundries																					
Copper	155.8	141.5	171.2	153.4	130.9	139.6	153.3	144.1	112.6	116.7	123.7	127.3	132.9	105.2	102.4	87.2	89.9	101.9	94.6	96.1	107.0
Alloy	13.3	13.0	16.4	15.4	11.1	13.1	12.0	11.6	9.0	11.4	12.3	15.5	14.3	11.2	11.2	8.6	9.0	10.2r	9.4r	9.4r	10.5
Ingot	250.3	268.1	280.5	209.2	222.6	241.3	239.6	224.6	154.4	171.3	190.2	203.4	206.3	181.1	178.8	139.9	145.0	149.2r	138.4r	140.4r	156.4
Total (Table 3, Item 19)	419.4	422.6	468.1	378.0	364.6	394.0	404.9	380.3	276.0	299.4	326.2	346.2	353.5	297.5	292.4	235.7	243.9	261.3r	242.4r	245.9r	273.9
Powder Plants																					
Copper	22.6	25.8	26.3	18.7	23.7	25.5	30.0	29.7	18.4	28.6	29.6	30.0	29.7	21.1	21.2	17.6	21.7	21.8	20.3	19.8	21.7
Alloy	5.2	5.4	4.8	3.7	4.0	3.8	4.4	3.7	2.3	3.7	3.7	4.1	3.7	2.6	2.6	2.2	2.7	2.7r	2.5	2.5	2.8
Ingot	6.3	5.9	6.9	7.3	4.6	5.3	6.9	3.2	1.1	2.1	3.2	3.3	3.2	2.3	2.3	1.9	2.4	2.4r	2.2	2.2	2.4
Total (Table 3, Item 22)	34.1	37.1	38.0	29.7	32.3	34.6	41.3	36.6	21.8	34.4	36.5	37.4	36.6	26.0	26.1	21.7	26.8	26.9r	25.0	24.5	26.9
Other Industries[a]																					
Copper	53.9	49.1	82.8	79.2	74.3	87.1	77.5	66.0	66.5	86.1	101.1	125.1	129.9	122.1	120.3	80.7	75.9	78.8	78.4	82.3	85.3
Ingot	62.9	47.3	42.7	34.1	36.0	38.0	39.0	33.0	33.2	54.8	57.5	42.4	52.2	45.4	38.9	36.0	33.8	35.1r	34.9r	36.6	37.9
Total (Table 3, Item 25)	116.8	96.4	125.5	113.3	110.3	125.1	116.5	99.0	99.7	140.9	158.6	167.5	182.1	167.5	159.2	116.7	109.7	113.9r	113.3r	118.9	123.2
All Industries																					
Copper	2,572.1	2,531.9	2,891.0	2,697.1	2,706.2	3,024.1	3,260.0	2,947.3	2,104.1	2,699.5	2,926.1	3,179.4	3,226.1	2,787.5	2,992.2	2,426.1	2,679.6	3,080.0	2,834.2r	3,015.6r	3,147.4
Alloy	261.1	304.9	356.3	277.2	298.0	370.0	375.2	335.8	227.6	310.0	312.8	337.4	352.2	291.3	304.9	231.6	286.4	331.5r	264.9r	274.7r	307.8
Ingot (Table 3, Item 10)[b]	323.9	326.5	336.6	256.8	276.4	301.3	300.0	284.7	194.3	236.5	258.2	256.6	266.2	235.6	235.6	191.8	197.5	205.0r	190.2r	196.1r	214.2
NET METAL CONSUMED (Table 3, Item 12)	3,157.1	3,163.3	3,583.9	3,231.1	3,280.6	3,695.4	3,935.2	3,567.8	2,526.0	3,246.0	3,497.1	3,773.4	3,844.5	3,314.4	3,536.7	2,849.5	3,163.5	3,616.5r	3,289.3r	3,486.4r	3,669.4

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Chemical, steel, aluminum and other industries.
(b) - Total consumption of ingot shown here is less than the consumption of metal by ingot makers shown in the details of Table 3, Item 3 and Table 3, Item 8. The difference, shown as Ingot Stocks & Other in Table 3, is primarily melting and other losses in the making of ingot.

Table 4

Supply of wire mill, brass mill, foundry and powder products and their consumption in the end-use markets

	METAL CONTENT, millions of pounds																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
(1) Bare Wire	235	242	245	226	218	270	209	219	167	199	230	238	236	197	220	179	158	147	119	136	161
(2) Communication Wire and Cable	543	534	716	735	803	766	873	799	584	687	836	885	971	850	851	751	683	727	629r	609r	596
(3) Building Wire				484	552	580	666	557	483	545	658	718	695	628	660	701	739	888	961r	1,015r	1,129
(4) Magnet Wire				466	427	496	537	446	338	451	516	525	531	443	492	396	444	511	472r	470r	505
(5) Power Cable				286r	247r	273r	306r	303r	222r	214r	241r	245r	270r	280r	275r	247r	218r	243r	259r	247r	252
(6) Apparatus Wire and Cordage	1,578	1,437	1,563	135	137	169	185	177r	139r	161r	161r	196r	202r	205r	189r	157r	199r	227r	203r	207r	216
(7) Automotive Wire and Cable (exc. Magnet)				57	71	80	88	72	69	92	108	121	112	89	95	105	139	186	214	228	217
(8) Other Insulated Wire and Cable				55r	58r	79r	68r	78r	75r	67r	72r	81r	77r	85r	93r	94r	73r	81r	71r	82r	85
(9) Total Insulated Wire and Cable	2,121	1,971	2,279	2,218	2,295	2,443	2,723	2,432r	1,910r	2,217r	2,627r	2,777r	2,858r	2,580r	2,655r	2,451r	2,495r	2,863r	2,809r	2,858r	3,000
(10) Total Wire Mill Products[a]	**2,356**	**2,213**	**2,524**	**2,444**	**2,513**	**2,713**	**2,932**	**2,651r**	**2,077r**	**2,416r**	**2,857r**	**3,015r**	**3,094r**	**2,777r**	**2,875r**	**2,630r**	**2,653r**	**3,010r**	**2,928r**	**2,994r**	**3,161**
(11) Strip, Sheet and Plate	1,007	1,033	1,147	883	964	1,075	1,160	1,059	832	965	973	1,027	1,067	873	962	728	796	949	731	763	858
(12) Mechanical Wire	115	113	130	111	111	128	126	105	65	92	94	104	112	80	82	61	69	73	62	63r	63
(13) Rod and Bar	666	787	886	693	744	910	1,005	899	587	826	900	943	962	810	814	620	770	876	788	801r	920
(14) Plumbing Tube and Pipe	399	400	433	378	447	463	519	347	310	374	439	459	483	414	401	369	447	502	524	548r	593
(15) Commercial Tube and Pipe	409	423	514	441	418	432	463	411	268	331	340	376	420	356	371	257	298	335	311	327r	355
(16) Total Brass Mill Products (page 19)	**2,596**	**2,756**	**3,110**	**2,506**	**2,684**	**3,008**	**3,273**	**2,821**	**2,062**	**2,588**	**2,746**	**2,909**	**3,044**	**2,533**	**2,630**	**2,035**	**2,380**	**2,735**	**2,416**	**2,502r**	**2,789**
(17) Total Foundry Products	**822r**	**810r**	**879r**	**782**	**733**	**704**	**820**	**732**	**631**	**606**	**642**	**662**	**726**	**572**	**564**	**444**	**498**	**504**	**470**	**475r**	**529**
(18) Total Powder Products	**56**	**62**	**61**	**47**	**52**	**54**	**64**	**69**	**46**	**65**	**64**	**56**	**54**	**38**	**44**	**34**	**39**	**43**	**37**	**35**	**39**
(19) Domestic Products - Total	**5,830**	**5,841**	**6,574**	**5,779**	**5,982**	**6,559**	**7,089**	**6,273r**	**4,816r**	**5,675r**	**6,309r**	**6,642r**	**6,918r**	**5,920r**	**6,113r**	**5,143r**	**5,570r**	**6,292r**	**5,851r**	**6,006r**	**6,518**
(20) Net Imports of Mill Products (page 20)	177	261	129	132	170	213	179	89	55	218	188	276	181	−20	209	180	282	489	407r	428r	341
(21) Mill Products to Domestic Market*	**6,007**	**6,102**	**6,703**	**5,911**	**6,152**	**6,772**	**7,268**	**6,362r**	**4,871r**	**5,893r**	**6,497r**	**6,918r**	**7,099r**	**5,900r**	**6,322r**	**5,323r**	**5,852r**	**6,781r**	**6,258r**	**6,434r**	**6,859**
(22) Building Construction	1,881	1,864	2,060	1,854	2,021	2,208	2,377	1,920	1,553	1,870	2,124	2,283	2,311	1,930	2,022	1,839	2,158	2,508	2,514r	2,647r	2,951
(23) Electrical and Electronic Products	1,443	1,446	1,712	1,602	1,628	1,718	1,845	1,698	1,171	1,473	1,657r	1,753	1,867	1,617	1,732	1,455	1,471	1,649	1,420r	1,485r	1,497
(24) Industrial Machinery and Equipment	1,122	1,128	1,217	1,074	1,027	1,158	1,235	1,106	816	957	1,038	1,127	1,142	991	1,072	832	892	984	876r	874r	934
(25) Transportation Equipment	673	715	745	634	737	805	919	773	630	866	941r	930	907	639	710	568	704	883	816	806r	820
(26) Consumer and General Products	888	949	969	747	739	883	892	855r	701r	727r	737r	825r	872r	723r	786r	629r	627r	757r	632r	622r	657

*Markets include — Building Construction: Plumbing & Heating; Building Wiring; Air Conditioning & Commercial Refrigeration; Builders' Hardware; Architectural.
Electrical & Electronic Products: Telecommunications; Power Utilities; Lighting & Wiring Devices; Business Electronics.
Industrial Machinery & Equipment: In-Plant Equipment; Industrial Valves & Fittings; Heat Exchangers; Off-Highway Vehicles; Non-Electrical Instruments.
Transportation Equipment: Automobile, Truck & Bus; Railroad; Marine; Aircraft & Aerospace.
Consumer & General Products: Appliances; Fasteners & Closures; Military & Commercial Ordnance; Coinage; Consumer Electronics; Utensils & Cutlery; Miscellaneous.

Sources: U.S. Department of Commerce, Bureau of the Census and Bureau of Industrial Economics; Metal Powder Producers Assn. (Line 18–1978 on); CDA.
p - preliminary r - revised
(a) - Copper content.

Table 4, Item 16.

Supply of brass mill products in the United States

METAL CONTENT, millions of pounds

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Strip, Sheet and Plate																					
Copper	240	190	238	185	236	239	269	261	212	227	233	234	259	201	227	176	203	254	208	206	237
Alloy	767	843	909	698	728	836	891	798	620	738	740	793	808	672	735	552	593	695	523	557	621
Total	1,007	1,033	1,147	883	964	1,075	1,160	1,059	832	965	973	1,027	1,067	873	962	728	796	949	731	763	858
Mechanical Wire																					
Copper	11	10	15	14	16	20	14	15	7	10	14	20	26	14	16	15	13	12	11	12r	13
Alloy	104	103	115	97	95	108	112	90	58	82	80	84	86	66	66	46	56	61	51	51	50
Total	115	113	130	111	111	128	126	105	65	92	94	104	112	80	82	61	69	73	62	63r	63
Rod and Bar																					
Copper	119	130	146	115	109	117	135	149	77	100	112	116	117	111	112	83	82	93	95	96r	114
Alloy	547	657	740	578	635	793	870	750	510	726	788	827	845	699	702	537	688	783	693	705	806
Total	666	787	886	693	744	910	1,005	899	587	826	900	943	962	810	814	620	770	876	788	801r	920
Plumbing Tube and Pipe																					
Copper	381	385	415	363	431	446	502	335	302	366	432	451	475	407	393	364	441	496	519	545r	589
Alloy	18	15	18	15	16	17	17	12	8	8	7	8	8	7	8	5	6	6	5	3	4
Total	399	400	433	378	447	463	519	347	310	374	439	459	483	414	401	369	447	502	524	548r	593
Commercial Tube and Pipe																					
Copper	260	276	363	304	288	305	322	265	171	221	239	280	322	273	284	195	231	271	259	273r	298
Alloy	149	147	151	137	130	127	141	146	97	110	101	96	98	83	87	62	67	64	52	54	57
Total	409	423	514	441	418	432	463	411	268	331	340	376	420	356r	371	257	298	335	311	327r	355
All Mill Products																					
Copper	1,011	991	1,177	981	1,080	1,127	1,242	1,025	769	924	1,030	1,101	1,199	1,006	1,032	833	970	1,126	1,092	1,132r	1,251
Alloy	1,585	1,765	1,933	1,525	1,604	1,881	2,031	1,796	1,293	1,664	1,716	1,808	1,845	1,527	1,598	1,202	1,410	1,609	1,324	1,370	1,538
TOTAL BRASS MILL PRODUCTS	2,596	2,756	3,110	2,506	2,684	3,008	3,273	2,821	2,062	2,588	2,746	2,909	3,044	2,533	2,630	2,035	2,380	2,735	2,416	2,502r	2,789

Sources- U.S. Department of Commerce, Bureau of Industrial Economics; CDA.

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Supply of brass mill products in selected countries

METAL CONTENT, millions of pounds

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Benelux	NA	NA	NA	NA	NA	NA	329	304	258	316	335	306	314	299	266	232	209	235	234	210r	206
Canada	228	261	269	231	221	236	281	264	192	223	232	272	264	191	229	155	183	206	195	196	224
France	479	497	597	585	580	598	667	603	476	569	586	590	638	657	615	600	567	617	561	546	545
Germany	780	968	1,103	1,067	986	1,130	1,311	1,157	932	1,219	1,207	1,219	1,337	1,403	1,277	1,256	1,378	1,546	1,511	1,560	1,621
Italy	437	453	479	527	494	572	626	554	520	647	639	652	650	734	694	668	697	767	809	873r	907
Japan	929	1,030	1,160	1,201	1,152	1,330	1,682	1,298	1,148	1,546	1,573	1,722	1,874	1,912	1,832	1,741	1,909	2,181	2,095	2,112	2,186
Scandinavia	247	272	277	279	260	286	316	316	247	285	295	321	348	340	320	324	346	380	357	372	371
Spain	92	110	138	132	133	167	193	181	133	178	183	174	191	184	148	172	164	166	163	167r	175
Switzerland	99	99	110	116	104	100	114	118	81	96	116	105	111	120	106	98	106	121	123	116	110
United Kingdom	924	1,019	1,035	956	842	905	1,004	903	737	803	827	845	797	644	563	597	565	620	601	577	576
United States	2,596	2,756	3,110	2,506	2,684	3,008	3,273	2,821	2,062	2,588	2,746	2,909	3,044	2,533	2,630	2,035	2,380	2,735	2,416	2,502r	2,789

Sources: World Bureau of Metal Statistics; U.S. Department of Commerce, Bureau of Industrial Economics; CDA.

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NA - not available

Table 4, Item 20.

Imports and exports of wire mill, brass mill and powder products

	METAL CONTENT, millions of pounds																				
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987p
Imports of:																					
Wire Rod	6.1	13.0	2.4	2.4	3.0	3.0	5.3	2.8	1.5	2.5	13.8	7.0	6.2	5.4	6.0	7.4	8.6	18.1	22.8	28.2	22.4
Bare Wire (incl. Stranded)	24.0	28.0	22.0	35.0	27.0	19.3	26.9	42.9	22.0	39.0	27.5	32.8	30.8	18.9	22.3	26.6	35.0	38.7	42.6	50.6	43.4
Insulated Wire and Cable						11.5	14.0	12.3	9.2	11.0	11.1	18.2	23.4	21.8	19.2	19.9	29.3	44.7	54.3	61.2	67.9
Total Wire Mill Products	**30.1**	**41.0**	**24.4**	**37.4**	**30.0**	**33.8**	**46.2**	**58.0**	**32.7**	**52.5**	**52.4**	**58.0**	**60.4**	**46.1**	**47.5**	**53.9**	**72.9**	**101.5**	**119.7**	**140.0**	**133.7**
Copper - Strip, Sheet and Plate	41.9	77.5	30.9	26.9	38.7	45.7	48.7	46.9	37.8	59.9	64.7	85.8	80.1	54.1	71.8	59.1	67.6	103.8	82.4	77.3	80.7
Rod and Bar	2.8	8.7	1.4	3.5	4.1	6.1	6.0	6.7	4.2	6.6	8.0	17.5	17.0	12.0	12.4	9.3	9.2	13.1	14.0	10.7	11.0
Tube and Pipe	31.5	48.7	31.4	36.4	43.1	51.6	55.0	31.3	24.3	33.7	39.9	46.3	44.8	22.9	33.8	35.7	55.1	65.8	65.1	85.2	99.1
Alloy - Strip, Sheet and Plate	59.8	64.6	45.5	47.8	74.4	92.4	84.9	57.2	51.4	104.6	105.7	153.7	121.5	81.3	140.7	124.3	158.5	232.0	191.4	172.7	145.1
Mechanical Wire	1.9	2.4	2.0	3.2	4.0	4.3	5.7	4.1	2.6	6.3	7.9	9.9	9.7	7.9	10.4	10.3	11.7	14.8	13.2	22.8	24.5
Rod and Bar	28.0	15.3	12.0	6.9	7.3	12.5	17.9	16.2	11.7	41.7	33.4	51.9	48.3	26.3	121.9	51.4	47.8	83.0	51.0	55.8	64.6
Tube and Pipe	36.3	50.4	44.9	40.3	47.6	53.1	48.2	40.4	32.4	47.3	47.2	69.5	54.4	43.6	51.5	45.5	54.7	71.8	64.0	62.8	61.3
Total Brass Mill Products	**202.2**	**267.6**	**168.1**	**165.0**	**219.2**	**265.7**	**266.4**	**202.8**	**164.4**	**300.1**	**306.8**	**434.6**	**375.8**	**248.1**	**442.5**	**335.6**	**404.6**	**584.3**	**481.1**	**487.3**	**486.3**
Total Powder Products	**3.0**	**3.5**	**2.8**	**2.3**	**2.4**	**2.7**	**2.3**	**1.7**	**1.6**	**2.6**	**2.4**	**2.5**	**2.3**	**2.0**	**2.7**	**2.3**	**3.1**	**3.3**	**2.5**	**2.8**	**2.5**
TOTAL IMPORTS	**235.3**	**312.1**	**195.3**	**204.7**	**251.6**	**302.2**	**314.9**	**262.5**	**198.7**	**355.2**	**361.6**	**495.1**	**438.5**	**296.2**	**492.7**	**391.8**	**480.6**	**689.1**	**603.3**	**630.1**	**622.5**
Exports of:																					
Wire Rod	10.4	5.4	7.2	8.3	14.6	10.9	10.4	14.0	10.9	8.5	11.2	13.0	30.9	53.5	30.7	18.2	12.5	13.2	5.2	16.8	23.0
Bare Wire (incl. Stranded) [a]	8.8	4.1	8.1	4.2	2.9	5.5	10.4	11.3	7.4	9.6	11.7	18.7	18.8	13.9	15.5	16.7	18.3	19.4	17.6	15.8	22.5
Insulated Wire and Cable	20.3	23.5	26.1	30.3	29.8	35.5	41.1	55.2	69.6	66.8	98.5	121.8	103.0	86.3	112.4	99.3	98.8	97.3	99.0r	103.2r	144.0
Total Wire Mill Products	**39.5**	**33.0**	**41.4**	**42.8**	**47.3**	**51.9**	**61.9**	**80.5**	**87.9**	**84.9**	**121.4**	**153.5**	**152.7**	**153.7**	**158.6**	**134.2**	**129.6**	**129.9**	**121.8r**	**135.8r**	**189.5**
Copper - Strip, Sheet and Plate	1.8	1.7	3.2	3.3	1.5	0.9	1.8	2.2	0.8	1.4	4.2	2.9	3.3	6.7	7.3	4.3	3.1	8.7	8.1	2.7	3.4
Rod and Bar	0.7	2.2	2.0	3.7	0.9	1.7	4.4	2.7	8.1	1.4	2.6	6.0	12.0	37.0	10.0	13.8	4.0	3.1	2.8	2.0	8.2
Tube and Pipe	1.4	1.2	1.9	2.1	2.5	2.3	15.5	13.5	4.4	5.1	6.2	5.8	18.8	38.9	24.1	10.1	8.0	9.5	10.0	11.8	14.3
Alloy - Strip, Sheet and Plate	2.2	2.5	4.7	4.6	4.2	7.9	12.2	14.5	6.4	8.3	8.6	9.0	10.4	17.3	28.4	10.2	11.6	11.7	15.8	11.4	16.9
Mechanical Wire	1.8	2.2	2.4	4.0	3.5	2.5	3.6	8.4	5.0	4.8	4.2	6.9	8.2	8.0	7.9	12.5	11.6	9.1	10.5	11.1	14.5
Rod and Bar	4.4	3.3	4.2	6.1	12.9	14.3	17.4	30.4	15.5	15.2	15.8	19.3	15.2	20.1	18.6	11.0	15.6	16.3	14.6	14.9	16.7
Tube and Pipe	4.2	3.0	3.5	3.3	5.1	4.1	13.7	16.0	13.2	12.4	7.0	12.0	32.9	31.0	26.6	14.1	13.9	10.0	9.9	9.7	12.9
Total Brass Mill Products	**16.5**	**16.1**	**21.9**	**27.1**	**30.6**	**33.7**	**68.6**	**87.7**	**53.4**	**48.6**	**48.6**	**61.9**	**100.8**	**159.0**	**122.9**	**76.0**	**67.8**	**68.4**	**71.7**	**63.6**	**86.9**
Total Powder Products	**2.0**	**2.3**	**3.5**	**3.0**	**3.9**	**3.7**	**5.0**	**5.4**	**2.5**	**3.7**	**3.5**	**3.8**	**3.9**	**3.9**	**2.5**	**2.1**	**1.7**	**1.9**	**2.5**	**3.0**	**4.9**
TOTAL EXPORTS	**58.0**	**51.4**	**66.8**	**72.9**	**81.8**	**89.3**	**135.5**	**173.6**	**143.8**	**137.2**	**173.5**	**219.2**	**257.4**	**316.6**	**284.0**	**212.3**	**199.1**	**200.2**	**196.0r**	**202.4r**	**281.3**
NET IMPORTS (Table 4, Item 24)	**177.3**	**260.7**	**128.5**	**131.8**	**169.8**	**212.9**	**179.4**	**88.9**	**54.9**	**218.0**	**188.1**	**275.9**	**181.1**	**– 20.4**	**208.7**	**179.5**	**281.5**	**488.9**	**407.3r**	**427.7r**	**341.2**

Sources: U.S. Department of Commerce, Bureau of the Census; Copper & Brass Fabricators Council, Inc.; CDA.

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(a) - Stranded not included prior to 1972.

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